



Contribution ID: 334

Type: **not specified**

Direct lattice calculation of $m_d - m_u$

Tuesday, 15 June 2010 11:30 (20 minutes)

In this work, we report on the first direct lattice calculation of the strong isospin breaking parameter, $m_d - m_u$. To determine this standard model parameter, we compute the hadron spectrum for several values the lattice volume, the pion mass and the strong isospin breaking parameter, and then extrapolate these results to the known experimental spectrum. We must address various systematics, the most important of which is the hadron electromagnetic self energy, which we discuss in some detail.

Primary author: WALKER-LOUD, Andre' (Department of Physics, College of William and Mary)

Presenter: WALKER-LOUD, Andre' (Department of Physics, College of William and Mary)

Session Classification: Parallel 20: Standard model parameters and renormalization

Track Classification: Standard model parameters and renormalization